

Appl. No. 10/758,375
Docket No. 9161Q
Amdt. dated November 30, 2006
Reply to Office Action mailed on October 30, 2006
Customer No. 27752

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AMENDMENTS TO THE SPECIFICATION

Please amend the specification as follows:

Please replace the paragraph beginning at page 3, lines 23 - 24, with the following amended paragraph:

Figure 3 is a schematic top view of a strike-through plate which may be used to measure Liquid Strike-through Through of a substrate.

Please replace the paragraph beginning at page 6, lines 13 - 16, with the following amended paragraph:

In one optional embodiment of the present invention the durable, hydrophilic substantially liquid pervious topsheet has a wash-off surface tension of greater than about 65 mN/m, when tested in accordance with the Determination of ~~surface tension~~ Surface Tension Test in the Test Methods section and further described herein.

Please replace the paragraph beginning at page 13, lines 4 - 13, with the following amended paragraph:

Typically the amount of hydrophilicity boosting compositions present on a topsheet substrate will vary depending upon many factors, including but not limited to, the substrate used, the nanoparticles used, the desired hydrophilicity of the durable, hydrophilic substantially liquid pervious topsheet, the consumer product in which the topsheet is used, etc. Preferably, the amount of hydrophilicity boosting compositions on the topsheet substrate ~~will be present in the invention~~ will be between about 0.01 grams of hydrophilicity boosting composition per square meter of substrate (or gsm substrate) and about 30 gsm substrate, more preferably between about 0.01 gsm substrate and about 20 gsm substrate, even more preferably between about 0.1 gsm substrate and about 10 gsm substrate. In one preferred embodiment of the present invention the nanoparticles are applied to the substrate as a dispersion in a carrier.

Please replace the paragraph beginning at page 14, lines 7 - 14, with the following amended paragraph:

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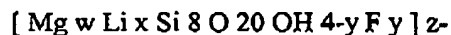
Either organic or inorganic nanoparticles may be used in the hydrophilicity boosting composition of the present invention. Suitable organic nanoparticle include, but are not limited to, nanolatexes. A "nanolatex", as used herein, is a latex with particle sizes less than or equal to about 750 nm. A "latex" is a colloidal dispersion of water-insoluble polymer particles that are usually spherical in shape. Nanolatexes may be formed by emulsion polymerization. "Emulsion polymerization" is a process in which monomers of the latex are dispersed in water using a surfactant to form a stable emulsion followed by polymerization. Particles are produced ~~with~~ can range in size from about 2 to about 600 nm.

Please replace the paragraph beginning at page 14, line 29 and continuing to page 15, line 2, with the following amended paragraph:

Layered clay minerals may be either naturally occurring or synthetic. An example of one non-limiting embodiment of the coating composition uses natural or synthetic hectorites, montmorillonites and bentonites. Another embodiment uses the hectorites clays commercially available, and typical sources of commercial hectorites are the LAPONITEs^{[[TM]]} from Southern Clay Products, Inc., U.S.A; Veegum Pro and Veegum F from R. T. Vanderbilt, U.S.A.; and the Barasymms, Macaloids and Propaloids from Baroid Division, National Read Comp., U.S.A.

Please replace the paragraph beginning at page 15, lines 3-11, with the following amended paragraph:

In one preferred embodiment of the present invention the nanoparticles comprise a synthetic hectorite which can be a lithium magnesium silicate. One such suitable lithium magnesium silicate is LAPONITE^{[[TM]]}, which has the formula:



wherein $w = 3$ to 6 , $x = 0$ to 3 , $y = 0$ to 4 , $z = 12 - 2w - x$, and the overall negative lattice charge is balanced by counter-ions; and wherein the counter-ions are selected from the group consisting of selected Na^+ , K^+ , NH_4^+ , Cs^+ , Li^+ , Mg^{++} , Ca^{++} , Ba^{++} , $N(CH_3)_4^+$ and mixtures thereof. (If the LAPONITE^{[[TM]]} is

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"modified" with a cationic organic compound, then the "counter-ion" could be viewed as being any cationic organic group (R.)

Please replace the paragraph beginning on page 15, lines 12-14, with the following amended paragraph:

Other suitable synthetic hectorites include, but are not limited to isomorphous substitutions of LAPONITE^{[[TM]]}, such as, LAPONITE B^{[[TM]]}, LAPONITE S^{[[TM]]}, LAPONITE XLS^{[[TM]]}, LAPONITE RD^{[[TM]]}, LAPONITE XLG^{[[TM]]}, and LAPONITE RDS^{[[TM]]}.

Please replace the paragraph beginning at page 15, lines 31 - 32, with the following amended paragraph:

Optional ingredients - The hydrophilicity boosting compositions of the present invention may also include optional ingredients such as^{[[.]]} a carrier, surfactant and adjunct ingredients.

EXAMPLES

Hydrophilicity boosting compositions, according to the present invention, are prepared as follows:

Component	% Wt of Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Nanoparticle ¹	0.1	0.05	0.05					0.1	1				
Nanoparticle ²				0.1	0.05	0.05	0.1						
Nanoparticle ³										1	1	4	
Nanoparticle ⁴													1
Surfactant ⁵	0.075	0.075		0.075	0.075						0.075	0.075	
Surfactant ⁶			0.025			0.025							
Water	--quantity sufficient to 100%--												

1. LAPONITE B^{[[TM]]} is sodium magnesium lithium fluorosilicate from Southern Clay Products, Inc.
2. LAPONITE RD^{[[TM]]} is sodium magnesium lithium silicate from Southern Clay Products, Inc.
3. Disperal 14N4-25 is a boehmite alumina nanoparticle available from North American Sasol, Inc
4. ZSM5 is a nanosized zeolite with a particle size from 70 to about 400 nm.
5. ~~Needel~~ NEODOL 91-6
6. ~~Silwet~~ SILWET L-77

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Please replace the paragraph beginning at page 20, line 23 – page 21, line 2, with the following amended paragraph:

Apparatus-~~Strike-through~~Through Equipment- (i) A Funnel fitted with magnetic valve: Rate of discharge of 25ml in ~~3.5~~ 3.5 (± 0.25) seconds; (ii) A ~~Strike-through~~Through plate: Constructed of 25 mm thick acrylic glass. The total weight of the plate must be 500 g. The electrodes should be of non-corrosive material. The electrodes are set in (4.0 mm x 7.0 mm) cross section grooves, cut in the base of the plate and fixed with quick setting epoxy resin. Figures 3, 4, and 5 illustrate a ~~Strike-through~~Through plate 200 containing electrodes 210. Figure 3 is a top view of a ~~Strike-through~~Through plate 200, where as Figure 4 is a sectional view along 4-4 of the ~~Strike-through~~Through plate 200 of Figure 3. Figure 5 is a sectional perspective view along 5-5 of the ~~Strike-through~~Through plate 200 of Figure 3; (iii) Base plate: A square of acrylic glass 125 mm x 125 mm approximately; (iv) Ring stand to support the funnel; (v) Electronic Timer measuring to 0.01 seconds; (vi) Burette with 50 ml capacity; and (vii) Core filter paper Ahlström Grade 989 or equivalent (average Strike-through time 1.7s + - 0.3 s, dimensions: 10 x 10 cm).

Please replace the paragraph beginning at page 21, line 3 - line 18, with the following amended paragraph:

Procedure: (1) Carefully cut the required number of samples, 12.5cm x 12.5cm with touching the sample only at the edge of the sample. (2) Taking 10 plies of Core filter paper place one sample on the set of 10 plies of filter paper on the base plate. The sample should be positioned on the filter paper in such a way that the side of the nonwoven, which is intended to face the user's skin (when applied in an absorbent article) is uppermost. (3) Place the ~~strike-through~~Strike-Through plate on top with the center of the plate over the center of the test piece. Center the burette and the funnel over the plate. (4) Ensuring that the electrodes are connected to the timer, switch on the timer and set the clock to zero. (5) Fill the burette with saline solution (0.9 wt% NaCl in deionized water). (6) Keep the discharge valve of the funnel closed and run 5.0 ml of liquid (= one gush) from the burette into the funnel. (7) Open the magnetic valve of the funnel to discharge

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5.0 ml of liquid. The initial flow of liquid will complete the electrical circuit and start the timer. It will stop when the liquid has penetrated into the pad and fallen below the level of the electrodes in the ~~strike-through~~ Strike-Through plate. (8) Record the time indicated on the electronic timer. (9) Wait 60 seconds and repeat steps (4), and (6) to (9) for the second, the third gush and any subsequent gush, with each gush comprising 5 ml of liquid. (e.g., 5ml into funnel, open magnetic valve, etc.) Record the Time for the 1st, 2nd and any subsequent gush in seconds.

Please replace Table 2 on page 21 with the following amended Table:

Table 2. ~~Strike-through~~ Through Times

Sample	Strike-through <u>Through</u> Time (seconds)		
	1st Gush	2 nd Gush	5th Gush
0.2% Laponite LAPONITE RD (Southern Clay Products)	2.5	2.8	3.0
0.1% Disperal DISPERAL P2 (Condea)	2.4	2.6	2.1

Please delete the paragraph beginning on page 21, lines 25-27.